Algebraic functor calculus and commutator theory

Abstract:

Classically, Lie algebras can be considered as linearizations of groups in several ways, and thus provide key tools in group theory. With the emergence of more and more other non-linear algebraic structures the problem arises to generalize the relations between groups and Lie algebras to a much broader context. A categorical approach to this problem will be presented starting out from a new notion of commutator and lower central series deduced from the cross-effects of the identity functor. Lie algebras then generalize to algebras over linear or, more generally, multilinear functor operads.

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